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April 13, 2006

Yuko Tanaka

*Y. Tanaka*

04-13-06

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Signature

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicants: Zosel *et al.*

Serial No.: 10/052,677

Filed: January 18, 2002

For: CAMERA POSITIONING AND  
CONFIRMATION FEEDBACK  
SYSTEM

Docket No.: 5557.P006

Examiner: Allyson N. Trail

Art Unit: 2876

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF (37 C.F.R. § 41.37)**

Sir:

This appeal brief is submitted pursuant to the Notice of Appeal mailed January 13, 2006, for the above-captioned patent application. The Notice of Appeal was filed in response to the final Office Action mailed August 9, 2005, and the Advisory Action mailed December 13, 2005. A petition for a one-month extension of the period for submitting the appeal brief is enclosed along with the required fee. Applicants respectfully request consideration of this appeal and allowance of the application by the Board of Patent Appeals and Interferences.

**I. REAL PARTY IN INTEREST**

The real party in interest in this appeal is Microscan Systems, Inc. ("Microscan"), a Delaware corporation having a principal place of business at 1201 SW 7<sup>th</sup> Street, Renton, Washington, 98058. Microscan is the assignee of the entire right, title and

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interest in the above-captioned application by virtue of an assignment recorded at the U.S. Patent Office at Reel 012689, Frame 0599.

## **II. RELATED APPEALS AND INTERFERENCES**

Applicants and Applicants' legal representative know of no interferences, appeals, or other proceedings that will directly affect, be directly affected by, or have a bearing on the Board's decision in this appeal.

## **III. STATUS OF CLAIMS**

Claims 1-29 are pending in the application and are the claims on appeal. All claims in the application currently stand rejected based on three references: U.S. Patent No. 6,019,286 to *Li et al.* (hereinafter *Li*), European Patent No. EP1128315 to *Rigoni et al.* (hereinafter *Rigoni*), and U.S. Patent No. 5,598,007 to *Bunce et al.* (hereinafter *Bunce*). The basis of rejection of the claims is as follows:

- (i) Independent claims 1 and 10 stand rejected under 35 U.S.C. § 102(b) as anticipated by *Li*.
- (ii) Dependent claims 2-3, 6-7 and 13 stand rejected under 35 U.S.C. § 102(b) as anticipated by *Li*.
- (iii) Independent claims 15, 20 and 23 stand rejected under 35 U.S.C. § 103 as obvious in view of, and therefore unpatentable over, *Li* in view of *Rigoni*.
- (iv) Dependent claims 8-9, 14, 16-17, 19, 21 and 27-29 stand rejected under 35 U.S.C. § 103 as obvious in view of, and therefore unpatentable over, *Li* in view of *Rigoni*.
- (v) Dependent claims 4-5 and 11-12 stand rejected under 35 U.S.C. § 103 as obvious in view of, and therefore unpatentable over, *Li* in view of *Bunce*.
- (vi) Dependent claims 18, 22 and 24-26 stand rejected under 35 U.S.C. § 103 as obvious in view of, and therefore unpatentable over, *Li* in view of *Bunce* and further in view of *Rigoni*.

## **IV. STATUS OF AMENDMENTS**

Prior to the final Office Action mailed August 9, 2005, claims 1-29 were pending in the application. Applicants submitted a response to the final Office Action, but did not

make any substantive amendments to any of the pending claims. All amendments made by Applicants have been entered by the Examiner, and the claims on appeal therefore incorporate all amendments.

A copy of all claims on appeal, as finally rejected by the Examiner on August 9, 2005, is attached hereto in Appendix A.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention relates generally to data acquisition equipment, and in particular, but not exclusively, to an apparatus, system and method to provide positioning feedback, reading/confirmation feedback, or both, to a user of a data acquisition device.

### **A. Positioning Feedback**

An embodiment employing the positioning feedback aspect of the invention is described in the specification at Figures 1 and 2A-2C, as well as the associated text. The embodiment of Figure 1 comprises a machine vision system 10 that includes a camera with optics designed to capture target images (“targets”) to be analyzed, such as two-dimensional bar codes known as “matrix” codes. Two-dimensional bar codes are only one example of a target whose image is analyzed using machine vision; other types of targets may also be analyzed (Spec. at 5, lines 8-13).

Whether the system 10 reads targets at distance A, B, or C (*see* Figure 1), and how big a target it can read at each distance, depends on the optics inside the system 10. If a small target far from system 10 is to be captured (*see* Figure 1, distance C), the system will use optics having a long focal length and a smaller field of view; conversely, if a large target close to system 10 is to be captured (*see* Figure 1, distance A), system 10 will use optics having a shorter focal length and larger field of view. Regardless how far the target is from system 10, the target must fall within the field of view and should be near the focus point of the optics (Spec. at 5, lines 15-20).

To allow a user of system 10 to easily align the field of view of the optics with a target, the system 10 projects a first light beam 12 and a second light beam 14 toward a plane on which the target is located. Both light beams 12 and 14 are shaped to emerge from the system 10 as “flat” beams, such that the projection of each beam on a plane will

be in a shape of a bar (Spec. at 5, lines 21-25). Both beams 12 and 14 are aligned such that the bars 16 and 18 created by their projection on a plane will intersect each other, and such that the intersection of the bars will be in the center of the field of view of the optics within system 10, regardless of distance between the optics and the target. In other words, whether the target is at distance A, B, or C from the system 10, the intersection of the bars will indicate the center of the field of view of the optics within the system. Thus, if the user places the target at the intersection of the bars, the target will be properly positioned to be read by the system (Spec. at page 5, line 26 to page 6, line 6).

In addition to allowing a user to position the target in the field of view, the shape of the intersection of bars 16 and 18 provides the user with feedback regarding the proper focus distance for the target. Figures 2A-2C illustrate one possible embodiment of the relationship between the shape formed by the intersection of the bars 16 and 18 and the focus distance (A, B or C) between the system 10 and the plane. Each bar 16 and 18 has a first end E and a second end D. Bars 16 and 18 intersect at point F, which, as explained above, always corresponds to the center of the field of vision of the optics in the system, independent of the distance between the system 10 and the plane (Spec. at 6, lines 18-27).

Figure 2A illustrates the pattern formed by the bars at a focus distance A from the system 10. In this case, bars 16 and 18 intersect each other at or near their second ends D, thus substantially forming a “V” shape. If the optics within the system are such that A is the proper focus distance, a user simply adjusts the distance from the system 10 to the plane until the “V” shape is formed, and then positions the target at or near point F; the target is then properly positioned and in focus for capture by the optics (Spec. at 7, lines 16-23). Figure 2B illustrates the intersection of the bars 16 and 18 when the plane on which they are projected is a distance B from the system. In this case, the bars 16 and 18 intersect substantially in an “X” shape, with the point of intersection F again being the center of the field of view of the optics. Again, if the optics within the system 10 are such that B is the correct focus distance, a user adjusts the distance from system 10 until the X shape is formed and positions the target at point F; the target is then at the proper distance and in the proper location for capture by the system (Spec. at 7, lines 8-16). Finally, in Figure 2C, the first bar 16 and second bar 18 intersect at or near their first ends E, thus substantially taking the shape of a caret (“^”). When the bars intersect in the caret shape

shown, the user knows that the plane on which the bars are projected is a distance C from the system, and that the point F is at the center of the view of the lens within the system. Thus, if the optics are such that the focus distance is distance C, the user simply adjusts the distance from the system 10 such that the caret-shaped intersection is created, and then positions the target to be captured at or near the intersection F (Spec. at 7, lines 1-8).

## **B. Reading/Confirmation Feedback**

The confirmation feedback aspect of the present invention, which can be used in combination with the positioning feedback described above, is illustrated by the embodiment described in Figure 6. A pair of confirmation LEDs 56 located on the illumination system 26 are coupled to the image processing electronics 32. After an image of a target is captured using the image sensor 66, it is processed by digital signal processing (DSP) hardware. If the DSP hardware successfully decodes the image, it sends a signal to the two confirmation LEDs 56. In response to this signal, the confirmation LEDs 56 flash, thus projecting a quick burst of green light onto the plane containing the target and providing feedback to the user that a successful read was accomplished. In this way, the user does not have to take his or her eyes away from the field or the image to know whether a successful read was accomplished; instead, he or she waits for the green flash, which indicates a successful decoding of the label (Spec. at page 11, line 25 to page 12, line 7).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The issues presented in this appeal are:

- (i) Whether independent claims 1 and 10 are anticipated by *Li*.
- (ii) Whether dependent claims 2-3, 6-7 and 13 are anticipated by *Li*.
- (iii) Whether independent claims 15, 20 and 23 are obvious in view of, and therefore unpatentable over, *Li* in view of *Rigoni*.
- (iv) Whether dependent claims 8-9, 14, 16-17, 19, 21 and 27-29 are obvious in view of, and therefore unpatentable over, *Li* in view of *Rigoni*.
- (v) Whether dependent claims 4-5 and 11-12 are obvious in view of, and therefore unpatentable over, *Li* in view of *Bunce*.

(vi) Whether dependent claims 18, 22 and 24-26 are obvious in view of, and therefore unpatentable over, *Li* in view of *Bunce* and further in view of *Rigoni*.

## VII. ARGUMENTS

This section sets forth Applicants' arguments against the rejections and in favor of the patentability of the claims on appeal. Part VII.A provides a brief overview of the *Li*, *Rigoni* and *Bunce* references, which the Examiner used to reject the claims on appeal. Part VII.B discusses why *Li* cannot anticipate claims 1, 2-3, 6-7, 10 and 13. Part VII.C discusses why *Li* and *Rigoni* cannot obviate independent claims 15, 20 and 23. Finally, part VII.D discusses why *Li*, in combination with either or both of *Rigoni* and *Bunce*, cannot obviate dependent claims 4-5, 8-9, 11-12, 14, 16-19, 21-22 and 24-29.

### A. Brief Overview of *Li*, *Rigoni*, and *Bunce*

#### 1. *Li*

*Li* discloses a portable data collection device. As shown in Figure 7, the device includes targeting optics consisting of first targeting optics 72 and second targeting optics 74, both of which project beams of light to assist a user in targeting the device. As shown in Figure 9, the first targeting optic 72 includes an aspherical entry surface 76 and a horizontally-oriented cylindrical exit surface 78. The exit surface 78 is tipped at an angle "a" from the center (col. 10, line 16); this tipping shifts the horizontal position of the horizontal bar (Fig. 7) such that it is *horizontally* centered in the target area (col. 10, lines 22-23). *Li* says nothing about *vertical* centering of the horizontal bar. Similarly, in the second targeting optic 74 the vertically-oriented cylindrical surface 86 is tipped at an angle "b" relative to the center, but *Li* does not disclose, teach or suggest that this tipping of the second targeting optic results in the vertical bar being either horizontally or vertically centered in the field of view.

#### 2. *Rigoni*

*Rigoni* discloses an apparatus and method for acquiring and reading optical codes with result indication. As shown in Figure 1, the indication means 20 includes a light source 22, a diaphragm 24 substantially adjacent to the light source, and a lens 26 that is kept aligned by a support 30 along optical axis 28 of light source 22. *Rigoni* discloses

that its confirmation beam is and should be projected directly on and very closely around the symbol being read, where it is likely to capture the attention of the user (paragraph [0017]); *Rigoni* accomplishes this result by using lens 26 to focus the light emitted by light source 22 into a tightly focused confirmation beam (*see, e.g.*, paragraphs [0043], [0059]).

### **3. *Bunce***

As shown in Fig. 1, *Bunce* discloses a hand-held symbology reader 40 that includes a detector assembly 42 mounted at a forward end 43 of the reader and oriented to receive light incident upon the detector assembly 42 from an object field 47 located along an optical axis 46 at an object distance  $d_0$  (col. 6, lines 28-32). To assist a user in positioning the reader 40 at the desired object distance  $d_0$ , the reader 40 provides a visible indication to the user when the reader 40 is at the desired object distance using two cursor light sources 60, 62 mounted to the reader 40 at its forward end 43. Each of cursor light sources 60, 62 produces a visible cursor beam 64, 66, respectively which are shaped by optical elements 61, 63 (col. 7, lines 9-15).

As shown in Fig. 2, at a distance  $d_1$  less than the desired object distance  $d_0$  the cursor beam 64 is offset above the optical axis 46 and the cursor beam 66 is offset below the optical axis 46. Similarly, at a distance  $d_2$  greater than the desired object distance  $d_0$  the cursor beam 66 has crossed the optical axis 46 and is offset above the detector assembly 42 and the cursor beam 64 has crossed the optical axis 46 and is offset below the detector assembly 42 (col. 7, lines 27-32). Cursor beams 64, 66 thus intersect only at the desired object distance  $d_0$ , and therefore the intersection of the beams cannot be at the center of the field of view independent of the object distance. Moreover, cursor beams 64 and 66 can only tell the user when the object is at the object distance  $d_0$ ; there is no disclosure in *Bunce* that information regarding more than one object distance can be conveyed to the user by the shape of the intersection of the cursor beams.

## **B. *Li* cannot anticipate claims 1, 2-3, 6-7, 10 and 13**

### **B.1 Summary of Examiner's rejection**

In an Office Action mailed February 23, 2005, the Examiner rejected claims 1, 2-3, 6-7, 10 and 13 as anticipated by *Li*. According to the Examiner, *Li* discloses the following with respect to these claims:

Figure 7 illustrates a portion of an imaging assembly. The assembly includes a lens array 62 and four optical portions 88a, 88b, 88c, and 88d. The four optical portions are illuminated by the illumination assembly 42 and create two separate bars which intersect in the center of the target 46 (shown in figure 5). Also shown in figure 5 is a more detailed view of the imaging assembly, which includes a camera 38. The camera assembly 38 includes an optic assembly 43 which focuses an image of a target area 44 on a photosensor array assembly 48. As can be seen in figure 7 the intersection of the two bars is independent of the distance between the lens and the plane. The bar will cross in the center of the target regardless of how far away the imaging assembly (including the lens) is.

Applicants replied to the Office Action mailed February 23, 2005, with a response that did not amend any claims but instead presented arguments about the Examiner's characterization of *Li* and the patentability of these claims in view of *Li*. In the final Office Action mailed August 9, 2005, the Examiner substantially repeated the above characterization of *Li* and responded to Applicants' arguments about *Li* as follows:

It is believed that it is clearly shown in figure 7 that the two illuminated beam intersect at the center of the target. Although the intersection is not shown in figure 5, it is illustrated in figure 5 that the center of the target will be illumination [*sic*] by the various beams which extend from the camera independent of the distance between the lens and the plane when the lens is installed on the base.

In response to the final Office Action mailed August 9, 2005, Applicants did not amend any claims and again argued that the Examiner had incorrectly characterized *Li*. To support the arguments, Applicants submitted a declaration under 37 C.F.R. § 1.132 (included as Appendix B of this brief) that showed that the targeting beams of *Li* do not remain at the center of the field of view independent of distance between the optics and the target. The Examiner entered and presumably considered the declaration, since she



did not indicate otherwise. Nonetheless, in the Advisory Action mailed December 13, 2005, she summarily dismissed the declaration and Applicants' arguments as follows:

The request for reconsideration has been considered but does NOT place the application in condition for allowance because: it is believed that Li et al meets the currently pending claims given that the Examiner interprets the applicant's claims with the broadest reasonable interpretation.

**B.2 Independent claims 1 and 10 include elements and limitations not disclosed in *Li*; *Li* therefore cannot anticipate these claims**

A claim is anticipated only if each and every element, as set forth in the claim, is found in a single prior-art reference. MPEP § 2131; *Verdegaal Bros. v. Union Oil of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). As explained below, *Li* cannot anticipate the claims it was used to reject because it does not disclose every element and limitation recited therein.

Claim 1 recites an apparatus combination including a base capable of receiving a camera including a lens and a projector coupled to the base and adapted to project a plurality of beams of light onto a plane positioned at a focus distance from the base, wherein the projections of the beams of light on the plane are geometric shapes, and wherein an intersection of the geometric shapes is "at the center of the field of view of the lens independent of the distance between the lens and the plane" when the lens is installed on the base.

*Li* does not disclose a combination including the recited limitations. As shown in Figure 7, the device includes targeting optics consisting of first targeting optics 72 and second targeting optics 74, both of which project beams of light to assist a user in targeting the device. Contrary to the Examiner's assertion, Fig. 7 does not clearly show that the intersection of the bars remains at the center of the field of view independent of the distance from the imaging optics. Based on the angle at which the light appears to leave the targeting optics 72 and 74, it appears that the horizontal bar would move across the field of view from top to bottom and the vertical bar would move across the field of

view from left to right (both as seen by the user) as the distance between the target and the targeting system increases.

Applicants' interpretation of Figure 7 is at least partially supported by Figure 9 and accompanying text. As shown in Figure 9, the first targeting optic 72 includes an aspherical entry surface 76 and a horizontally-oriented cylindrical exit surface 78. The exit surface 78 is tipped at an angle "a" from the center (col. 10, line 16); this tipping shifts the horizontal position of the horizontal bar (Fig. 7) such that it is *horizontally* centered in the target area (col. 10, lines 22-23). *Li* says nothing about *vertical* centering of the horizontal bar. Similarly, in the second targeting optic 74 the vertically-oriented cylindrical surface 86 is tipped at an angle "b" relative to the center, but there is no disclosure, teaching or suggestion in *Li* that this tipping of the second targeting optic results in the vertical bar being either horizontally or vertically centered in the field of view. If it was true that the vertical bar remains centered, *Li* would have said that. But it does not. *Li* thus cannot anticipate claim 1 because it does not disclose every element and limitation of the claimed combination.

Claim 10 recites a method combination including projecting a first light beam onto a plane, wherein the projection of the first light beam on the plane is a first geometric shape; projecting a second light beam onto the plane, wherein the projection of the second light beam on the plane is a second geometric shape; and aligning the first and second beams such that an intersection of the first and second geometric shapes is at the center of the field of view of a lens of a camera "independently of the distance between the lens and the plane." By analogy to the discussion above for claim 1, *Li* does not disclose, teach or suggest every element and limitation of the claimed combination.

**B.3 Applicants tested the scanner of *Li* and verified that it does not meet the limitations of claims 1 and 10.**

Despite the fact that *Li*, as discussed above, does not disclose that its vertical and horizontal bars remain at the center of the field of view independent of the distance between the camera and the target, the Examiner nonetheless persists in alleging that such a limitation is present in the arrangement of *Li*.

To counter the Examiners' allegation, Applicants submitted the declaration under 37 C.F.R. § 1.132 of Mr. Bruce R. Scharf; a copy of the declaration is included in Appendix B of this brief. The declaration explains the methodology and presents the results of tests conducted by Microscan on a Metanetics Corporation scanner believed to be the same scanner shown and described in *Li*, or at least believed to have the same optical arrangement as the scanner shown in *Li*. As set forth in the declaration, the tests conclusively show, contrary to the Examiner's assertion, that the targeting beams used in *Li* do not intersect at the center of the field of view of the imaging optics regardless of the distance between the target and the imaging optics of the scanner. In fact, the tests clearly support the Applicants' arguments above about the disclosure of *Li*: *Li* says nothing about centering the vertical bar, and the declaration conclusively shows that the vertical bar does not remain centered.

**B.4 *Li* cannot anticipate dependent claims 2-3, 6-7 and 13.**

As to claims 2-3, 6-7 and 13, if an independent claim is allowable, then any claim depending therefrom is also allowable. *See, e.g.*, MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claims 1 and 10 are in condition for allowance. Applicants submit that claims 2-3, 6-7 and 13 are therefore allowable by virtue of their dependence on allowable independent claims, as well as by virtue of the features recited in the claims. Applicants respectfully request withdrawal of the rejections and allowance of these claims.

**B.5 CONCLUSION: *Li* cannot anticipate claims 1, 2-3, 6-7, 10 and 13.**

In view of the above, Applicants submit that *Li* does not disclose, teach or suggest every element and limitation of the combinations recited in independent claims 1 and 10 and therefore cannot anticipate these claims. Since *Li* does not disclose every element and limitation of independent claims 1 and 10, it also cannot disclose, teach or suggest every element and limitation of the combinations recited in dependent claims 2-3, 6-7 and 13. Applicants therefore respectfully request withdrawal of the rejection and allowance of these claims.

**C. *Li* and *Rigoni* cannot obviate independent claims 15, 20 and 23**

**C.1 Summary of Examiner's Rejection**

In an Office Action mailed February 23, 2005, the Examiner rejected independent claims 15, 20 and 23 as obvious in view of, and therefore unpatentable over, *Li* in view of *Rigoni*. According to the Examiner, *Li* discloses the following with respect to these claims:

*Li et al*'s teachings are discussed above. *Li et al* additionally teaches an image processor for processing an image captured by the camera. (See claim 1). *Li et al* fails to teach a confirmation beam for confirming processing of the image.

*Rigoni et al* teaches the following in regards to claims 8, 9, 15, 17, and 29"

"In an apparatus and a method for acquiring and reading optical codes, the indication of the reading result is carried out projecting a luminous figure onto the optical code, that is to say in the position on which the attention of the operator is focused. The luminous figure can have an information content also more complex than the simple indication of the end of the reading." (Abstract)

Teachings by *Li et al* regarding claims 14, 16, 19-21, 23, 27 and 28 are discussed above. *Li et al* however, fails to teach the limitation of the conformation beam. *Rigoni [sic] et al*'s teaching regarding the confirmation beam are discussed above.

In view of *Rigoni et al*' *[sic]* teachings, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to include in *Li et al*'s scanner, a confirmation beam. Having a confirmation beam gives the operator a positive indication of whether or not the image was read and processed correctly. This indication allows the operator to know whether the code has been decoded before proceeding to read another code and makes the reading process more efficient.

Responding to Applicants' previous argument regarding the disclosure of *Rigoni*, the Examiner said the following:

Additionally, it is believed that *Rigoni [sic] et al* continues to meet the claimed limitations regarding a confirmation beam. The confirmation beam may be directed towards the

target, however it is not clear that the beam is actually focused. As is claimed in the current application, the confirmation beam is projected onto the plane of the target. Although the beam itself may be unfocused, the projection is focused to reach the plane of the target.

Applicants replied to the Office Action mailed February 23, 2005, with a response that did not amend any claims but instead presented arguments regarding the Examiner's characterization of *Li* and *Rigoni* and the patentability of these claims in view of the references. In the final Office Action mailed August 9, 2005, the Examiner substantially repeated the above characterizations of *Li* and *Rigoni* and responded to Applicants' arguments regarding *Rigoni* as follows:

Additionally, it is believed that Rigonie [*sic*] et al continues to meet the amended claim limitation of the unfocused confirmation beam. The confirmation beam as taught by Rigonie [*sic*] et al is directed towards the target indicating that the image processor has processed the image. It may or may not include additional functions other than simply indicating that the image has been successfully processes [*sic*]. If no additional functions are specified, then only a beam of light (does not have to be focused) is directed at the target.

**C.2 *Li* and *Rigoni*, when combined, do not disclose, teach or suggest every element and limitation in independent claims 15, 20 and 23.**

To establish a *prima facie* case of obviousness, three criteria must be met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. As explained below, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness.

Claim 15 recites an apparatus combination including a base capable of receiving a camera including a lens, an image processor capable of being coupled to the camera for processing an image of a target captured by the camera, and a confirmation projector coupled to the image processor, wherein the projector emits "an unfocused confirmation beam" onto the plane of the target when the image processor signals the confirmation

projector that the image processor has processed the image. The Examiner concedes that *Li* does not disclose a confirmation beam for confirming the processing of the image, but alleges that *Rigoni* discloses this feature. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine *Li* with *Rigoni* to arrive at the claimed invention.

Applicants respectfully disagree. The Examiner asserts that *Rigoni* can accomplish its functions without focusing its confirmation beam, but *Rigoni* clearly says otherwise. *Rigoni* discloses that its confirmation beam is and should be projected *directly on and very closely around* the symbol being read, where it is likely to capture the attention of the user (paragraph [0017]). Projecting a confirmation beam so closely around the symbol is impossible without focusing the confirmation beam, and consequently *Rigoni* specifies that the confirmation beam should be focused using lenses (*see, e.g.*, paragraphs [0043], [0059]). *Rigoni* therefore cannot disclose, teach or suggest a combination including a confirmation projector wherein the projector emits “an unfocused confirmation beam” onto the plane of the target when the image processor signals the confirmation projector that the image processor has processed the image. Since the Examiner concedes that *Li* also does not disclose this element, the combination of *Li* and *Rigoni* cannot disclose every element and limitation of the claim and therefore cannot render the claim obvious.

Claim 20 recites a process combination including capturing an image of a target on a plane using a camera, processing the image captured by the camera using an image processor, and projecting “an unfocused confirmation beam” onto the plane when the image processor signals to the confirmation projector that the image processor has processed the image. By analogy to the discussion above in connection with claim 15, Applicants submit that *Li* and *Rigoni* cannot render the claim obvious because, even when combined, they do not disclose every element and limitation of the claim.

Claim 23 recites an apparatus combination including a base capable of receiving an image processor and a camera including a lens and a projector coupled to the base and adapted to project a plurality of beams of light onto a plane positioned at a focus distance from the lens, wherein the projections of the beams of light on the plane are geometric

shapes, and wherein“ an intersection of the geometric shapes is at the center of the field of view of the lens independent of distance between the lens and the plane” when the lens is installed on the base. By analogy to the discussion above for claim 1, *Li* does not disclose, teach or suggest a combination including these elements and limitations. *Rigoni* also does not disclose these limitations, meaning that the combination of *Li* and *Rigoni* cannot disclose every element and limitation in the claim.

**C.3 *Li* and *Rigoni* teach away from the combinations recited in independent claims 15 and 20.**

In addition to not disclosing every element and limitation of the combinations recited in claims 15 and 20, *Rigoni* teaches away from such combinations. *Rigoni* discloses that its confirmation beam is and should be projected directly on and very closely around the symbol being read, where it is likely to capture the attention of the user (paragraph [0017]). Projecting a confirmation beam so closely around the symbol is impossible without focusing the beam, and consequently *Rigoni* specifies that the beam should be focused using lenses (*see, e.g.*, paragraphs [0043], [0059]). *Rigoni* thus teaches that one should do exactly the opposite of what is recited in the claimed combination, which is to project “an unfocused confirmation beam” onto the plane when the image processor signals to the confirmation projector that the image processor has processed the image. *Rigoni* therefore would not motivate one of ordinary skill in the art to combine it with any other reference or modify it to arrive at the presently claimed combinations.

**C.4 CONCLUSION: *Li* and *Rigoni* cannot obviate independent claims 15, 20 or 23**

In view of the above, Applicants submit that *Li* and *Rigoni*, when combined, do not disclose, teach or suggest every limitation recited in independent claims 15, 20 and 23 and therefore their combination cannot obviate these claims. Further, *Rigoni* teaches away from the combination recited in claims 15 and 20 and therefore would not motivate one of ordinary skill in the art to attempt such a combination. Applicants therefore respectfully that *Li* and *Rigoni* cannot obviate claims 15, 20 and 23 and respectfully request withdrawal of the rejection and allowance of these claims.

**D. No combination of *Li* with either or both of *Rigoni* and *Bunce* can obviate dependent claims 4-5, 8-9, 11-12, 14, 16-19, 21-22 and 24-29.**

If an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, independent claims 1, 10, 15, 20 and 23 are in condition for allowance. Applicants submit that dependent claims 4-5, 8-9, 11-12, 14, 16-19, 21-22 and 24-29 are therefore allowable by virtue of their dependence on allowable independent claims, as well as by virtue of the features recited therein.

### VIII. CONCLUSION

Given the above arguments supporting patentability, Applicant believes all claims on appeal are in condition for allowance. If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

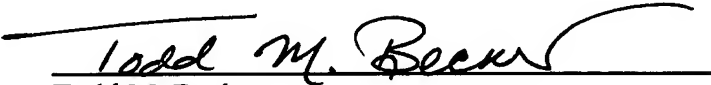
#### Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 4-13-06

  
Todd M. Becker  
Attorney for Applicant(s)  
Registration No. 43,487

Blakely, Sokoloff, Taylor & Zafman LLP  
12400 Wilshire Boulevard, Seventh Floor  
Los Angeles CA 90025-1030  
Phone: 206-292-8600  
Facsimile: 206-292-8606

Enclosures: Postcard  
Appeal Brief transmittal  
Petition for Extension of Reply Period  
Check for \$620.00



## APPENDIX A — CLAIMS

1. (Previously Presented) An apparatus comprising:
  - a base capable of receiving a camera including a lens; and
  - a projector coupled to the base and adapted to project a plurality of beams of light onto a plane positioned at a focus distance from the base, wherein the projections of the beams of light on the plane are geometric shapes, and wherein an intersection of the geometric shapes is at the center of the field of view of the lens independent of the distance between the lens and the plane when the lens is installed on the base.
2. (Previously Presented) The apparatus of claim 1 wherein the geometric shapes are bars.
3. (Original) The apparatus of claim 2 wherein the plurality of bars comprises two bars, including a first bar and a second bar.
4. (Original) The apparatus of claim 3 wherein a shape created by the intersection of the first and second bars varies according to the focus distance.
5. (Original) The apparatus of claim 4 wherein each of the first and second bars have first and second ends, and wherein
  - if the first and second bars intersect at or near both their first ends, substantially forming a caret shape, the camera is at a first focus distance;
  - if the first and second bars bisect each other, the camera is at a second focus distance; and
  - if the first and second bars intersect each other at or near both their second ends, substantially forming a V shape, the camera is at a third focus distance.
6. (Original) The apparatus of claim 1 wherein the projector comprises first and second projectors, each comprising:
  - a light source;
  - a beam former positioned between the light source and the plane for forming the beam emitted from the light source; and
  - a lens for focusing the light beam emitted from the beam former.

7. (Original) The apparatus of claim 1, further comprising a camera including a lens.
8. (Previously Presented) The apparatus of claim 1, further comprising:
  - an image processor for processing an image captured by the camera; and
  - a confirmation projector coupled to the image processor, wherein the projector projects a confirmation beam onto the plane when the image processor signals to the confirmation projector that the image processor has processed the image.
9. (Original) The apparatus of claim 8 wherein the confirmation beam flashes instantaneously onto the plane.
10. (Original) A process comprising:
  - projecting a first light beam onto a plane, wherein the projection of the first light beam on the plane is a first geometric shape ;
  - projecting a second light beam onto the plane, wherein the projection of the second light beam on the plane is a second geometric shape; and
  - aligning the first and second beams such that an intersection of the first and second geometric shapes is at the center of the field of view of a lens of a camera, independently of the distance between the lens and the plane.
11. (Original) The process of claim 10 wherein the first and second geometric shapes are bars, and wherein a shape created by the intersection of the first and second bars varies according to the focus distance.
12. (Original) The process of claim 11 wherein each of the first and second bars have first and second ends, and wherein
  - if the first and second bars intersect at or near both their first ends, substantially forming a caret shape, the lens is at a first focus distance from the plane;
  - if the first and second bars bisect each other, the lens is at a second focus distance from the plane; and
  - if the first and second bars intersect each other at or near both their second ends, substantially forming a V shape, the lens is at a third focus distance from the plane.

13. (Original) The process of claim 10 wherein projecting the beam comprises:
- emitting light from a light source;
  - forming the beam emitted from the light source using a beam former positioned between the light source and the plane; and
  - focusing the light beam emitted from the beam former.
14. (Original) The process of claim 10, further comprising:
- capturing an image using the camera;
  - processing the image captured by the camera using an image processor; and
  - projecting a confirmation beam onto the plane when the image processor signals to the confirmation projector that it has processed the image.
15. (Previously Presented) An apparatus comprising:
- a base capable of receiving a camera including a lens;
  - an image processor capable of being coupled to the camera for processing an image of a target captured by the camera; and
  - a confirmation projector coupled to the image processor, wherein the projector emits an unfocused confirmation beam onto the plane of the target when the image processor signals the confirmation projector that the image processor has processed the image.
16. (Original) The apparatus of claim 15 wherein the confirmation projector comprises:
- a light source; and
  - a lens for focusing the light emitted from the light source.
17. (Original) The apparatus of claim 15 wherein the confirmation beam flashes instantaneously onto the plane.
18. (Original) The apparatus of claim 15, further comprising a projector coupled to the camera and adapted to project a plurality of beams of light onto a plane positioned at a focus distance from the lens, wherein the projections of the beams of light on the plane

are in the shape of bars, and wherein an intersection of the bars is at the center of the field of view of the lens when installed on the base.

19. (Original) The apparatus of claim 15, further comprising a camera including a lens.

20. (Previously Presented) A process comprising:

capturing an image of a target on a plane using a camera;

processing the image captured by the camera using an image processor; and

projecting an unfocused confirmation beam onto the plane when the image processor signals to the confirmation projector that the image processor has processed the image.

21. (Original) The process of claim 20 wherein projecting the confirmation beam comprises:

emitting light from a light source;

focusing or collimating the light beam emitted from the light source onto the plane.

22. (Original) The process of claim 20, further comprising:

projecting a first light beam onto a plane, wherein the projection of the first light beam on the plane is in the shape of a first bar;

projecting a second light beam onto the plane, wherein the projection of the second light beam on the plane is in the shape of a second bar; and

aligning the first and second beams such that an intersection of the bars is at the center of the field of view of a lens of a camera, independently of the distance between the lens and the plane.

23. (Previously Presented) An apparatus comprising:

a base capable of receiving an image processor and a camera including a lens;

a projector coupled to the base and adapted to project a plurality of beams of light onto a plane positioned at a focus distance from the lens, wherein the projections of the beams of light on the plane are geometric shapes, and wherein an intersection of the

geometric shapes is at the center of the field of view of the lens independent of distance between the lens and the plane when the lens is installed on the base; and

a confirmation projector coupled to the image processor, wherein the projector projects a confirmation beam onto the plane when the image processor signals the confirmation projector that the image processor has processed the image.

24. (Original) The apparatus of claim 23 wherein the geometric shapes comprise two bars, including a first bar and a second bar.

25. (Original) The apparatus of claim 24 wherein the relative positions of the intersection of the first and second bars varies according to the focus distance.

26. (Original) The apparatus of claim 25 wherein each of the first and second bars have first and second ends, and wherein

if the first and second bars intersect at or near both their first ends, substantially forming a caret shape, the camera is at a first focus distance;

if the first and second bars bisect each other, the camera is at a second focus distance; and

if the first and second bars intersect each other at or near both their second ends, substantially forming a V shape, the camera is at a third focus distance.

27. (Original) The apparatus of claim 23 wherein the projector comprises first and second projectors, each comprising:

a light source;

a beam former positioned between the light source and the plane for forming the beam emitted from the light source; and

a lens for focusing the light beam emitted from the beam former.

28. (Original) The apparatus of claim 23 wherein the confirmation projector comprises:

a light source; and

a lens for focusing the light emitted from the light source.

29. (Original) The apparatus of claim 23 wherein the confirmation beam flashes instantaneously onto the plane.

## **APPENDIX B— EVIDENCE**

Applicants submitted the declaration under 37 C.F.R. § 1.132, of Mr. Bruce Scharf. Mr. Scharf's declaration provides convincing evidence that *Li* does not disclose what the Examiner says it does.

The contents of Mr. Scharf's declaration are included herewith in their entirety on the following pages.



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicants:** Zosel *et al.*

**Serial No.:** 10/052,677

**Filed:** January 18, 2002

**For:** CAMERA POSITIONING AND  
CONFIRMATION FEEDBACK  
SYSTEM

**Docket No.:** 5557.P006

**Examiner:** Allyson N. Trail

**Art Unit:** 2876

**DECLARATION OF BRUCE R. SCHARF**  
**37 C.F.R. § 1.132**

I, Bruce R. Scharf, hereby declare as follows:

1. Microscan Systems, Inc., is the assignee of the above-noted patent application by virtue of an assignment recorded in the U.S. Patent Office at Reel 012689, Frame 0599.
2. I am the Vice President of Engineering of Microscan Systems, Inc.
3. I have read and understood the specification and claims in the above-captioned patent application.
4. I have read and understood the specification and drawings of U.S. Patent No. 6,019,286 to Li *et al.* (hereinafter "Li").
5. Li is assigned on its face to Metanetics Corporation of Fort Meyers, Florida (hereinafter "Metanetics").
6. Upon information and belief, Metanetics manufactured scanners substantially as shown and described in Li and sold them to the Auto-Image ID Corporation (hereinafter "Auto-Image ID"), after which Auto-Image ID re-sold the scanners under their own brand name



pursuant to a re-branding agreement with Metanetics. The Metanetics label attached to the scanner's optical assembly, as shown in Exhibits E-G, supports this information and belief.

7. I have obtained an Auto-Image ID Model 2100/2150 scanner. Photographs of the Model 2100/2150 scanner are attached hereto as Exhibits A-D. The views of the Model 2100/2150 scanner shown in Exhibits A-D substantially correspond to views shown in Figures 3-6 of Li.

8. Upon information and belief, the Auto-Image ID Model 2100/2150 scanner shown in Exhibits A-D is substantially the same scanner as the one illustrated and described in Li, or at least has substantially the same optical arrangement as the scanner illustrated and described in Li.

9. At my direction, the Auto-Image ID Model 2100/2150 scanner shown in Exhibits A-D was tested to evaluate whether the targeting beams disclosed in the patent always intersect at the center of the field of view of the scanner's imaging optics. The methodology and results of the test are shown in Exhibits E-H.

10. The test of the Auto-Image ID Model 2100/2150 scanner was conducted as follows, with reference to Exhibits E-H:

(a) Exhibit H is a digital photograph of a target. The target is a sheet of paper with a rectangle drawn thereon with approximate dimensions of 5 inches by 3.75 inches. These dimensions correspond to the preferred size of the field of view specified by Li at a distance of 8.5 inches between the target and the scanner's imaging optics (*see* Li at col. 8, line 22).

(b) A vertical dashed line that substantially bisects the top and bottom sides of the rectangle was drawn on the target, as was a horizontal dashed line that substantially bisects the left and right sides of the rectangle. The intersection of the vertical and horizontal dashed lines thus represents the center of the field of view.

(c) While maintaining the intersection of the vertical and horizontal dashed lines at the center of the field of view of the scanner's imaging optics, the scanner's targeting beams were projected onto the target while the distance between the imaging optics and the target was changed. Exhibit E is a photograph showing the targeting beams projected onto the target at distance of 2 inches between target and imaging optics; Exhibit F at 5.5 inches between target and imaging optics; and Exhibit G at 9 inches between target and imaging optics.

(d) At each of the three distances between the target and the imaging optics illustrated in Exhibits E, F and G, the position on the target where the centerlines of the projections of the targeting beams intersected was marked directly on the target with a triangle symbol. The target with the triangle symbols thereon is shown in Exhibit H.

11. Exhibits E-G, as well as the triangles marked on the target in Exhibit H, demonstrate that the intersection of the targeting beams produced by the Auto-Image ID Model 2100/2150 scanner does not remain at the center of the field of view of the imaging optics independently of the distance between the target and the imaging optics.

12. All statements made herein based on my own knowledge are true, and any statements made upon information and belief are believed to be true. I understand that willful

false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. § 1001)  
and may jeopardize the validity of the application or any patent issuing thereon.

★ ★ ★ ★

Respectfully submitted,

Date: 10 October 2005

Bruce R. Scharf  
Bruce R. Scharf

## **APPENDIX C — RELATED PROCEEDINGS**

*[No Related Proceedings]*